

Semiconductors & IC Design and Test Overview

25 Oct 2024
Dr. Hai-chuan Yang
Keysight Technologies



Ensure That Tomorrow's Technologies Perform in the Real World and a Connected Safety World

At Keysight, we help innovators

- anticipate emerging technologies
- automate intelligence throughout the workflow
- measure what's never been measured before
- speed time to market and reduce risk

From conceptualization to commercialization, innovators start with Keysight.

A Brief History of Keysight



1939 – 1998 Hewlett-Packard years

The company was founded on electronic measurement innovation.



1999 – 2013 Agilent Technologies years

Spun off from HP, Agilent became the world's premier measurement company.

In September 2013, it announced the spin-off of its electronic measurement business.



2014+ Keysight years

Keysight became an independent company focused on electronic measurement solutions.

Keysight's Breadth and Depth Supports Your Innovations

¹Per company estimate. ²As of fiscal year end. ³Includes indirect channel. ⁴Patents awarded to Keysight and Keysight's business under Agilent and HP. ⁵Per external sources. ⁶Sites with >50 R&D engineers.

Key Statistics FY23

#1
Market Position¹

\$5.46B
Revenue²

30K+
Total Customers³

3,800+
Patents⁴

100+
Countries Served

14.9K
Employees

~\$24.5B
Market Cap^{2,5}

20
R&D Sites⁶



We're the Partner of Choice for Global Market Leaders¹

23/25 top technology companies

14/15 top mobile operators

5/5 top cloud companies

25/25 top semiconductor suppliers

10/10 top automotive companies

22/25 top aerospace & defense contractors

10/10 top engineering & technical universities

To name a few, in the semiconductor market, Samsung, TSMC, NVIDIA, Intel, Qualcomm, Broadcom, ASML are all our customers.

We Offer End-to-End Solutions Across Workflows and Markets

MARKETS

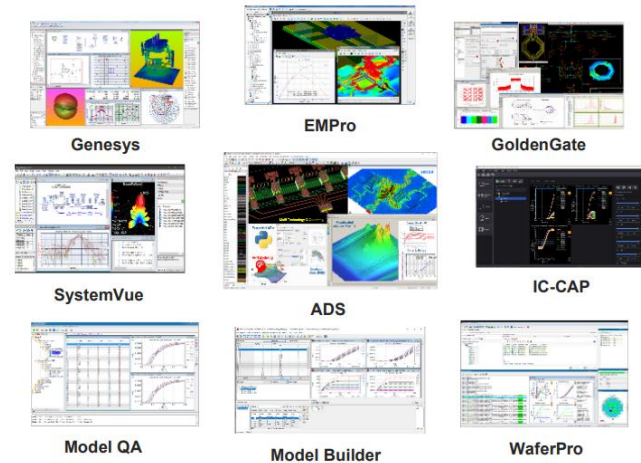


WORKFLOW



Semiconductor / IC Design and Test Solutions from Keysight

Support at Every Stage with Powerful Software, Hardware, and Customized Service from Keysight



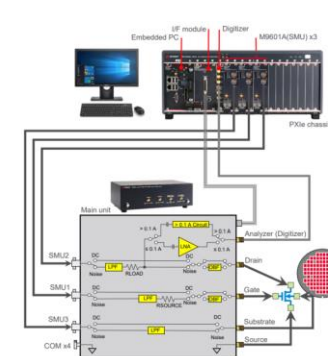
i8050A Wire bond inspection test



NX5402A Silicon Photonics Wafer Test System Solution



PD1500A/1550A Double Pulse Test solution



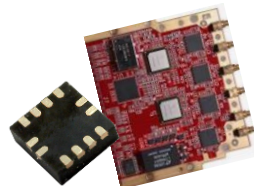
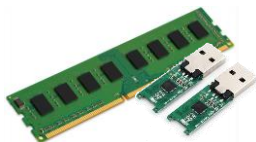
E4727B Advanced Low-Frequency Noise Analyzer



4080 Series/P9002A Parametric Tester

Keysight in Semiconductors: Support the all kinds of innovators

IC category – from its functions and test point of view



Analog, RF IC

Generate / analyze analog signal



Communication System



Radar System



Wearable Device / IoT

Digital IC

Transmit / receive digital signal



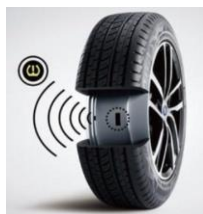
AI & Big Data



VR / AR PC / Tablet

Mixed-Signal, MMIC

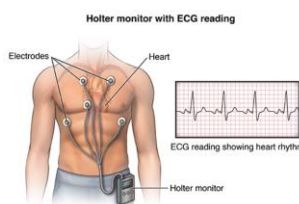
Integration between digital and analog IC design.



Automotive Electronics



Defense



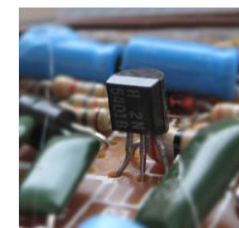
Biomedical & Healthcare



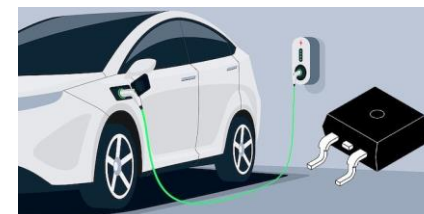
Consumer Electronics

Power IC & Parametric

High voltage / current IC



IV / CV Test



Electric Vehicle / Charging Infrastructure

Photonic IC

Integration optical and electronic signal



Data Center & Optical Communication



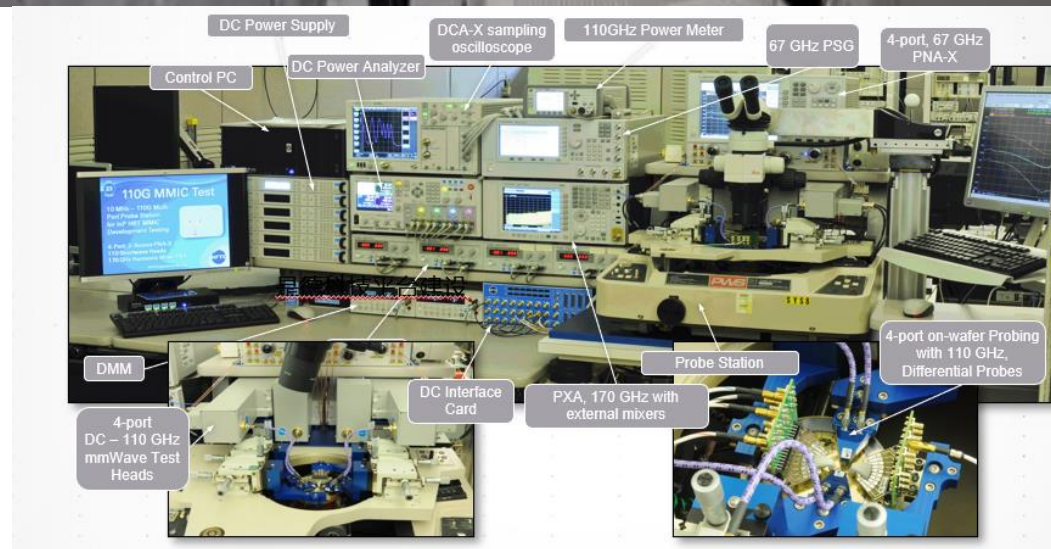
LiDAR

Why Partner with Keysight?

We don't just test semiconductors, we make them.

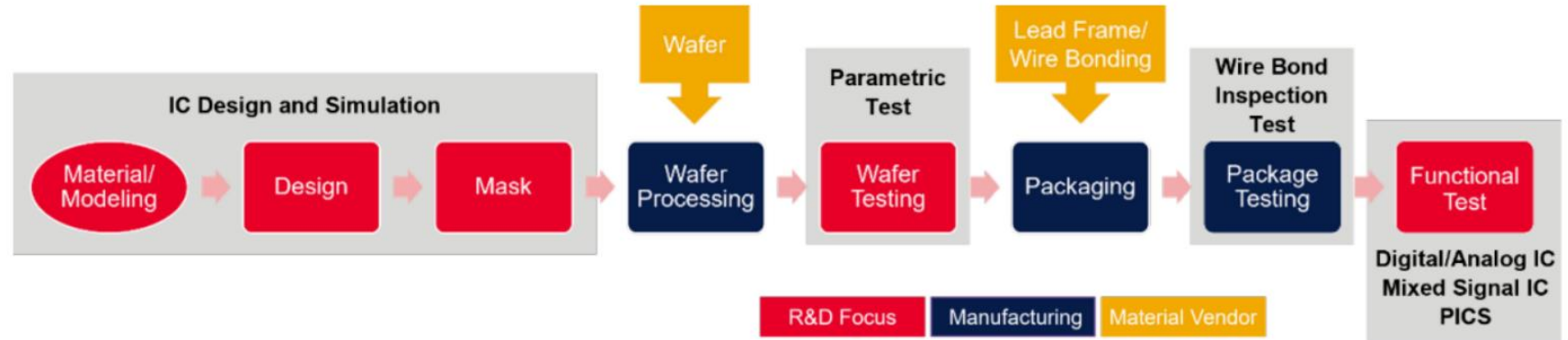
Keysight powers our performance products with custom **MMICs, designed and manufactured in our own fab**

- We manufacture them in our proprietary indium phosphide (InP) and gallium arsenide (GaAs) fab with custom ASIC signal processing
- Our process ensures the industry's fastest, most reliable measurement



On-Wafer R&D test station

Summary



- Keysight – Who are we?
- Keysight Offers IC Design and Test Solutions Across the Semiconductor Ecosystem
- Why Partner with Keysight?
 - We don't just test semiconductors, we make them.
 - We provide industry-standard design and testing solutions.
 - We provide research collaboration and support.



